

# **STATEMENT OF BASIS**

for the

## **PACIFICORP CURRANT CREEK POWER PLANT**

Ground Water Discharge Permit No. UGW230003

April 08, 2009

### **1. DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION**

PacifiCorp operates the Currant Creek Power Plant (CCPP) in Juab County, Utah. CCPP is situated on 240 acres located 1 mile west of Mona, Utah. This facility is located in portions of Sections 25 and 26, T11S, R1W, SLBM, Utah. CCPP is a natural gas-fired power plant with integrated transmission facilities. CCPP employs state-of-the-art technology, including F-class high efficiency combustion turbines operated in combined-cycle mode. CCPP also employs dry cooling technology for steam condensing.

CCPP does not discharge any process effluent directly onto or into the ground. CCPP uses one pond to evaporate process effluent. The pond has a double synthetic liner configuration with a leak detection system for compliance monitoring.

The following facilities at CCPP are permitted by rule in accordance with Utah Administrative Code R317-6-6.2: Raw water tank, Demineralized water storage, and Storm Water Runoff Basin.

### **2. SITE HYDROGEOLOGY**

The CCPP site is located in the Juab Valley in Juab County, Utah. This valley lies within the Basin and Range Province, just west of the Wasatch Fault Zone. The Basin and Range Province has undergone extension since late Cenozoic time. Movement along the Wasatch Fault has occurred since Quaternary time and has down-faulted Juab Valley relative to the southern Wasatch Range.

The Juab Valley is comprised of Tertiary and Quaternary-age coalesced alluvial fan deposits and unconsolidated to semi-consolidated basin fill deposits. The near surface deposits at the site consist of clay, silt, sand, pebbles and cobbles. Soil borings indicate the site subsurface predominantly consists of silt, silty sand, and sand from the surface to 182 feet below ground surface (bgs). Gravel, cobbles, and cobble layers were present in all borings.

The principal ground water system in Juab Valley consists of saturated unconsolidated basin-fill deposits. Ground water generally occurs in the permeable sand and gravel layers, separated by layers of silt and clay. All permeable units below the water table are presumed to be saturated. Recharge to the valley-fill sediments is primarily infiltration of snow melt,

surface runoff, and direct precipitation. Ground water recharge to the CCPP site is predominantly from the east side of Juab Valley. Ground water discharge is principally through evapotranspiration, inter-basin flow, and ground water pumpage by wells.

Based on regional topography, ground water flow direction in the vicinity of the site is east-northeast toward the Mona Reservoir. Depth to ground water at the site is approximately 122 feet bgs. Basin fill aquifers in Juab Valley have estimated hydraulic conductivities ranging from 1 to 125 feet per day, with specific yields ranging from 0.05 to 0.3

### 3. WATER QUALITY AND GROUND WATER CLASSIFICATION

At the CCPP site, the water quality in the upper unconfined aquifer is generally Class II Drinking Water Quality Ground Water with total dissolved solids of approximately 850 mg/l. Sodium, sulfate, and chloride cation content is higher than other wells in the Juab Valley. Well data imply the ground water beneath the site is derived in part from evaporate rock types in the alluvium. Water quality information was collected for the CCPP from an upgradient monitoring well.

### 4. BASIS OF PERMIT ISSUANCE

The determination of impacts from present day releases to ground water is a major concern for ground water management. CCPP utilizes a zero discharge approach by using appropriate containment technology with a monitoring component to assess potential impacts to ground water quality from the operation of the CCPP. This permit will incorporate double-lined evaporation pond with direct leak detection and Best Management Practices as the compliance mechanism. Operating procedures and Best Management Practices are described in the discharge permit appendices. These documents were revised by PacifiCorp in 2008 to reflect current system component design and ongoing operational practices.

### 5. BASIS FOR SPECIFIC PERMIT CONDITIONS

There are no new requirements or Compliance Schedule items in the renewed ground water discharge permit. All documents and reporting are current, and the facility is in compliance with applicable ground water discharge permit rules.

### 6. CORRECTIVE ACTION CLEAN UP

The Ground Water Quality Protection Regulations require applicants to submit a Contamination Investigation and Corrective Action Plan or other response measures to be taken to remedy any violation of ground water quality standards resulting from discharges occurring prior to issuance of a ground water discharge permit. At the time of permit issuance, no corrective action is envisioned. However, should future data indicate that clean up is needed, the permit has a compliance condition that allows the Executive Secretary to call for a Contamination Investigation and Corrective Action Plan to be submitted and made a part of this permit.